

Appln No. 10/735,148
Amdt date August 21, 2006
Reply to Office action of May 19, 2006

REMARKS/ARGUMENTS

Claims 1-13 as amended remain in this application. Claims 3-8 and 11-13 were previously indicated to be allowable, however, they have now been rejected for obviousness-type double patenting. Claims 1, 2, 9 and 10 were rejected under 35 U.S.C. §§ 102 or 103 as being unpatentable over a paper published by Liu et al. Claims 2, 9 and 10 all depend from claim 1. Applicants submit that claim 1 is allowable and the dependent claims would be allowable therewith.

In response to an earlier action in this application, claim 1 was amended to recite that the composite material is "ductile." Clearly the Examiner did not consider this sufficient for acceptance of the claims and the recitation has been deleted, restoring claim 1 to its original form. The claim continues to recite that the second phase embedded in the amorphous matrix by crystallization in situ is ductile.

In response to the previous action in this application, it was stated that the ductility of the second embedded phase was unknown and immaterial. The property was unknown to the undersigned and not specifically discussed with applicants. It is now known that the precipitated phase in the material described in the Liu paper is not ductile, and this is material.

Enclosed herewith is a Declaration of William L. Johnson, one of the co-inventors of this application, a co-author of the Liu paper, and a well qualified expert in the field of amorphous metal materials. Dr. Johnson's declaration clearly states the crystalline phase in the Liu paper is not ductile. This is true regardless of stating a lower limit on ductility. Ductility is a qualitative property of a material as well as being measurable quantitatively. A material is either ductile or non-ductile (brittle).

As stated in the declaration, "ductile" is defined as "capable of being fashioned into a new form . . . capable of being permanently drawn out without breaking . . . capable of being molded or worked" The crystalline phase described by Liu et al. does not meet this definition. First of all, the crystalline phase is an intermetallic compound and such compounds are notoriously

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inherently non-ductile. It is Dr. Johnson's expert opinion that the compound would not be inherently ductile. (The undersigned is of the same opinion but was unwilling to state this without being qualified as an expert. in this application.)

More significantly, the particle size of the crystalline phase in the Liu paper is too small to be ductile. The particles are less than 20 nanometers and particles of the intermetallic compound less than 20 nm cannot be ductile because of the Hall-Petch phenomenon. (This is further explained in the declaration.)

Thus, regardless of any lower limit on the numerical value for "ductility" the material described by Liu is not a ductile second phase as required by claim 1. Thus, claim 1 is not anticipated under § 102. There is no issue under § 103 since a ductile second phase produced by situ crystallization would clearly not have been obvious at the time this invention was made. The rejections under §§102 and/or 103 of claim 1 and the claims dependent from it should be withdrawn.

Since the only remaining rejection in this application is a provisional obviousness-type double patenting rejection, and this is the earlier filed of the two applications which are the basis for the rejection, the rejection should be withdrawn and the application passed to issue. Section 804 of the Manual of Patent Examining Procedure states the procedure in these circumstances:

If a "provisional" nonstatutory obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer. If the ODP rejection is the only rejection remaining in the later-filed application, while the earlier-filed application is rejectable on other grounds, a terminal disclaimer must be required in the later-filed application before the rejection can be withdrawn.

If "provisional" ODP rejections in two applications are the only rejections remaining in those applications, the examiner should withdraw the ODP rejection in the earlier filed application thereby permitting that application to issue without need of a terminal disclaimer. A terminal disclaimer must be required in the later-filed application before the ODP rejection can be withdrawn and the application permitted to issue. If both applications are filed on the same day, the examiner should

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determine which application claims the base invention and which application claims the improvement (added limitations). The ODP rejection in the base application can be withdrawn without a terminal disclaimer, while the ODP rejection in the improvement application cannot be withdrawn without a terminal disclaimer.

Applicants submit that this is the earlier filed application with an actual filing date of December 12, 2003. The allegedly conflicting application has an actual filing date of November 28, 2005. Both applications contain claims for priority in a chain back to the filing date of a U.S. provisional application with a filing date of April 30, 1999. The subject matter of the claims of the two applications which is common to both applications (e.g., the second paragraph of claim 1 in each case) is carried through that chain to the provisional application. Thus, this is either the first filed application or the two applications were filed with the same effective filing date.

Comparing the claims in the two applications shows that this application claims "a reinforced amorphous metal object . . . ", whereas the allegedly conflicting application claims "a golf club, comprising: a club shaft; and a club head, . . . ". Clearly, this application should be considered as claiming "the base invention" and the second application considered as claiming "the improvement (added limitations)" as mentioned in Section 804 of the MPEP. Thus, the procedure of Section 804 applies and the provisional double patenting rejection should be withdrawn.

The allegedly conflicting application also claims priority in a second chain of earlier applications, dating back to December 4, 1995. This second chain of applications first discloses only the "golf club" portion of the claims in the allegedly conflicting application. (See, for example, Publication 2005/0124433, of application 10/685,950, which is the most recent of the applications in this second chain of priority claims.) Thus, the other application does not have an earlier effective filing date for the allegedly conflicting subject matter. The aforementioned procedure, namely withdrawing the provisional double patenting rejection in this application, remains the appropriate course of action.

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As set forth above, applicants submit that all of the claims are now in condition for allowance and such action is respectfully requested. If the Examiner believes there are additional issues, it is requested that a telephone call be placed to the undersigned instead of or before issuing a final rejection. It is our experience that such telephone interviews are quite useful for identifying and resolving issues, thereby leading to early disposal of applications.

Respectfully submitted,
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